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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/800,176

03/12/2004

Anne Farbrot

01898-213

8607

21839 7590 02/26/2009
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER

BOGART, MICHAEL G

ART UNIT

PAPER NUMBER

3761

NOTIFICATION DATE

DELIVERY MODE

02/26/2009

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UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte ANNE FARBROT and INGRID GUSTAFSSON

Appeal 2008-4799¹
Application 10/800,176²
Technology Center 3700

Decided:³February 24, 2009

Before ERIC GRIMES, RICHARD M. LEBOVITZ, and FRANCISCO C.
PRATS, *Administrative Patent Judges*.

PRATS, *Administrative Patent Judge*.

¹ Oral argument in this case was heard February 11, 2009.

² The application is assigned to SCA Hygiene Products AB, which is the real party in interest (App. Br. 1).

³ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 involving claims to an absorbent article that includes a cross-linked polysiloxane gel. The Examiner has rejected the claims as obvious. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

STATEMENT OF THE CASE

Claims 1-18 are pending and on appeal (App. Br. 1). Claims 1 and 16, the independent claims on appeal, are representative and read as follows:

1. An absorbent article, which article is intended to be positioned in the crotch area of a wearer and has a surface intended during use to be in contact with skin and/or mucous membranes and which comprises at least one absorbent body and a carrier containing at least one additive intended to be released from the carrier, wherein the carrier comprises a polysiloxane gel,

wherein the polysiloxane gel is a structure in which polysiloxanes are cross-linked and form a three-dimensional network which is swollen in a hydrophobic substance, or a substance where the greater part is hydrophobic, and forms an oil gel.

16. A method of providing an additive to an absorbent article comprising providing a polysiloxane gel with an additive and attaching the polysiloxane gel to an absorbent article, which article is intended to be positioned in the crotch area of a wearer, and wherein the additive is arranged so as to be released from the polysiloxane gel during use of the absorbent article,

wherein the polysiloxane gel is a structure in which polysiloxanes are cross-linked and form a three-dimensional network which is swollen in a hydrophobic substance, or a substance where the greater part is hydrophobic, and forms an oil gel.

The Examiner applies the following documents in rejecting the claims:

Muckenfuhs	US 4,934,535	Jun. 19, 1990
Roe	US 5,635,191	Jun. 3, 1997
Lin	US 6,168,782 B1	Jan. 2, 2001
Runeman	US 6,187,990 B1	Feb. 13, 2001

The following rejections are before us for review:

Claims 1-4, 6-12, 14-16, and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Roe and Lin (Ans. 3-5).

Claims 5 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Roe, Lin, and Runeman (Ans. 5-6).

Claim 13 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Roe, Lin, and Muckenfuhs (Ans. 6).

OBVIOUSNESS -- ROE AND LIN

ISSUE

The Examiner finds that Roe “teaches an absorbent article (50) having a topsheet (520) having a polysiloxane gel/lotion/emollient that functions as a carrier for an additive such as a pharmaceutical agent or odor inhibitor” (Ans. 3). The Examiner concedes that Roe “does not disclose expressly the specific cross-linked three-dimension structure or hydrophobic substance” recited in the article of claim 1 (*id.* at 4).

To meet that limitation, the Examiner cites Lin as teaching “cross-linked three-dimensional gelled networks of polysiloxane, an active ingredient such as a vitamin, and a hydrophobic substance (oil)” (*id.*). The Examiner further cites Lin as teaching that the polysiloxane gels are “useful in personal, health care applications and personal hygiene. The silicone gel

chemically bonds to the active ingredient which provides an avenue for entrapping vitamins personal care products and for controlling the release of active ingredient in delivery systems” (*id.*).

Based on these teachings, the Examiner concludes that one of ordinary skill in the art would have considered it obvious to “replace the polysiloxane emollient of Roe with the elastomeric silicone of Lin in order to provide an effective active ingredient and oil retention and delivery mechanism” (*id.*). Additionally, the Examiner reasons that claim 1 “would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art” (*id.* (citing *In re Fout*, 675 F.2d 297 (CCPA 1982))).

Appellants contend that the Examiner’s conclusion of obviousness is erroneous because “[o]ne skilled in the art would not substitute the elastomeric silicon[e] of Lin for the polysiloxane emollient of Roe” (App. Br. 4). Specifically, Appellants argue that Lin’s elastomeric silicone is a cross-linked, relatively rigid structure that functions to deliver an additive contained within the silicone structure to the user’s skin while the structure stays on the article, whereas Roe’s polysiloxane compound is an emollient that is itself transferred to the skin to provide a soothing moisturizing effect (*id.*).

Thus, Appellants argue, a person of ordinary skill in the art would have recognized that Lin’s elastomeric silicone “would function against the principles of Roe. Further, one skilled in the art would recognize that Roe has addressed any mobility/migration issues by requiring the key component of an immobilizing agent. There is no problem or issue to be solved by using the elastomeric silicone of Lin” (*id.* at 5).

The Examiner responds that at least one of Roe's embodiments includes using a lotion to deliver additive materials such as perfumes, antibacterial substances, or deodorants to the skin, and that substituting Roe's emollient with Lin's elastomeric silicone "does not change this functionality, even if other functions of Roe are changed. The elastomeric silicone of Lin would still allow these materials to be transferred to the wearer's skin. Furthermore, Lin teaches an oil which can perform the soothing, moisturizing and lubricated function of the emollients of Roe" (Ans. 7).

Appellants reply that the substitution posited by the Examiner ignores the importance of the transferability of the lotions disclosed by Roe (Reply Br. 2).⁴ Moreover, Appellants urge, the oil in Lin's article is explicitly disclosed as not being an active ingredient, and therefore, contrary to the Examiner's argument, it "does not perform the soothing, moisturizing, or lubricating function of the emollient of Roe" (*id.* at 3).

In view of the positions advanced by the Examiner and Appellants, the issue with respect to this rejection is whether the Examiner erred in concluding that one of ordinary skill in the art would have considered it obvious to replace the polysiloxane emollient-containing lotion on the topsheet of Roe's diaper with the elastomeric cross-linked polysiloxane gel of Lin.

⁴ This document is not paginated. We therefore refer to page numbers as if the document was paginated consecutively beginning with the first page.

FINDINGS OF FACT (“FF”)

1. Roe discloses “a disposable diaper having a lotion coating on the outer surface of the [skin-facing] topsheet that is semisolid or solid at ambient temperatures (i.e., at 20° C.)” (Roe, col. 2, ll. 64-66).

The lotion coating “is adapted to be transferred to the wearer’s skin, where it acts to reduce the adherence of BM [(bowel movements)] to the skin of the wearer, thereby improving the ease of BM clean up” (*id.* at col. 2, l. 67, through col. 3, l. 2).

2. Roe discloses that the lotion coating on the diaper’s topsheet has “from about 10 to about 95% of a substantially water free emollient having a plastic or fluid consistency at 20° C. and compris[es] a member selected from the group consisting of petroleum-based emollients, fatty acid ester emollients, alkyl ethoxylate emollients, polysiloxane emollients, and mixtures thereof” (Roe, col. 3, ll. 14-20; *see also* col. 11, l. 43 through col. 12, l. 45).

Roe discloses that petroleum-based emollients useful in its lotion compositions include “mineral oil (also known as ‘liquid petrolatum’) and petrolatum (also known as ‘mineral wax,’ ‘petroleum jelly’ and ‘mineral jelly’)” (*id.* at, col. 10, ll. 62-64).

3. Roe discloses:

The key active ingredient in these lotion compositions is one or more emollients. As used herein, an emollient is a material that softens, soothes, supples, coats, lubricates, moisturizes, or cleanses the skin. An emollient typically accomplishes several of these objectives such as soothing, moisturizing, and lubricating the skin. For the purposes of the present invention, these emollients have either a plastic or fluid consistency at 20°C., i.e., at ambient temperatures. This

particular emollient consistency allows the lotion composition to impart a soft, lubricious, lotion-like feel.

(Roe, col. 10, ll. 33-42.)

4. Roe discloses that its lotion compositions “preferably have a melting profile such that they are relatively immobile and localized on the diaper topsheet at room temperature, are transferable to the wearer at body temperature, and yet are not completely liquid under extreme storage conditions” (Roe, col. 3, ll. 40-44).

5. Despite the desirability of having the lotion compositions relatively immobile on the diaper topsheets, Roe discloses that it is important for the lotion compositions to be “easily transferable to the skin by way of normal contact, wearer motion, and/or body heat” (Roe, col. 3, ll. 46-47).

6. Roe discloses that immobilization of the lotion compositions on the topsheet is achieved by including an immobilizing agent in the lotion composition (Roe, col. 13, ll. 5-8). Specifically, Roe discloses

The immobilizing agent counteracts th[e] tendency of the emollient to migrate or flow by keeping the emollient primarily localized on the surface of the diaper topsheet to which the lotion composition is applied. This is believed to be due, in part, to the fact that the immobilizing agent raises the melting point of the lotion composition above that of the emollient. Since the immobilizing agent is also miscible with the emollient (or solubilized in the emollient with the aid of an appropriate emulsifier), it entraps the emollient on the surface of the diaper topsheet as well.

(Roe, col. 13, ll. 23-32.)

7. Examples of suitable immobilizing agents include “C₁₄ -C₂₂ fatty alcohols, C₁₂ -C₂₂ fatty acids, and C₁₂ -C₂₂ fatty alcohol ethoxylates having

an average degree of ethoxylation ranging from 2 to about 30, and mixtures thereof” (Roe, col. 13, ll. 50-53).

8. Roe discloses that optional components for the lotion compositions “include water, viscosity modifiers, perfumes, disinfectant antibacterial actives, pharmaceutical actives, film formers, deodorants, opacifiers, astringents, solvents and the like” (Roe, col. 18, ll. 32-35).

9. Lin discloses “crosslinked three-dimensional gelled networks of elastomeric silicones, especially elastomeric silicone polyethers, containing an active ingredient and an oil. The compositions can be used in personal and health care applications, personal hygiene, and household cleaning applications” (Lin, col. 1, ll. 16-21).

10. Lin’s silicone elastomer gels are prepared by reacting the gel-producing ingredients (the polysiloxanes, polyethers, unsaturated hydrocarbons, and catalyst) in the presence of an oil and the active ingredient, thereby entrapping the active ingredient in the gel matrix (*see* Lin, col. 2, l. 55, through col. 3, l. 5).

11. Lin discloses that the “active ingredient” can be “any component that is intended to furnish pharmacological activity or other direct effect in the diagnosis, cure, mitigation, treatment, or prevention of disease, or to affect the structure or any function of the body of man or other animals” (Lin, col. 7, ll. 24-28).

12. Lin discloses:

Some representative examples of active ingredients including drugs, are vitamin-minerals; hormones; topical antimicrobial agents such as antibiotic active ingredients, antifungal active ingredients for the treatment of athlete’s foot, jock itch, or ringworm, and acne active ingredients; astringent active ingredients; deodorant active ingredients; wart remover

active ingredients; corn and callus remover active ingredients; pediculicide active ingredients for the treatment of head, pubic (crab), and body lice; active ingredients for the control of dandruff, seborrheic dermatitis, or psoriasis; and sunburn prevention and treatment agents.

(Lin, col. 7, ll. 36-46.)

13. Lin discloses that the oil in its gel compositions can be a silicone compound “such as low molecular weight linear and cyclic volatile and non-volatile alkyl and aryl siloxanes” (Lin, col. 5, ll. 11-13), or an organic compound, including, among a variety of other organic compounds “petroleum hydrocarbons such as petroleum jelly [and] mineral oil” (*id.* at col. 6, ll. 47-48).

14. Lin discloses that its gel compositions have a variety of applications:

The compositions according to this invention have particular value in the personal care arena. They can be used alone, or blended with other cosmetic ingredients, to form a variety of personal care products.

Thus, they are useful as carriers in antiperspirants and deodorants. They are lubricious and can improve the properties of skin creams, skin care lotions, moisturizers, facial treatments such as acne or wrinkle removers, personal and facial cleansers, bath oils, perfumes, colognes, sachets, sunscreens, pre-shave and after-shave lotions, liquid soaps, shaving soaps, and shaving lathers. They can be used in hair shampoos, hair conditioners, hair sprays, mousses, permanents, depilatories, and cuticle coats, to enhance gloss, and provide conditioning benefits.

In cosmetics, they can function as leveling and spreading agents for pigments in make-ups, color cosmetics, foundations, blushes, lipsticks, lip balms, eyeliners, mascaras, oil removers, color cosmetic removers, and powders. When incorporated into sticks, gels, lotions, aerosols, and roll-ons, the compositions can impart a dry, silky-smooth, payout.

In addition, the compositions exhibit other advantageous and beneficial properties such as shelf stability and ease of preparation. Hence, they can have wide application, but especially in antiperspirants, deodorants, skin care products, and for conditioning hair.

Further, the compositions have utility as additives for cellulosic or synthetic nonwoven carrier substrates used in wet-like cleansing wipes such as wet-wipes, tissues, and towels, marketed generally for personal hygiene and household cleaning tasks.

(Lin, col. 13, l. 45, through col. 14, l. 8.)

PRINCIPLES OF LAW

In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art. “[The Examiner] can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.”

In re Fritch, 972 F.2d 1260, 1265 (Fed. Cir. 1992) (citations omitted, bracketed material in original).

However, “[e]xpress suggestion to substitute one equivalent for another need not be present to render such substitution obvious.” *In re Fout*, 675 F.2d at 301; *see also In re Mayne*, 104 F.3d 1339, 1340 (Fed. Cir. 1997) (“Because the applicants merely substituted one element known in the art for a known equivalent, this court affirms [the rejection for obviousness].”).

In *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 127 S. Ct. 1727 (2007), the Supreme Court emphasized the flexibility of the analysis applied under § 103, and reaffirmed the obviousness of choosing from among known equivalent solutions to a problem:

When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under § 103.

Id. at ___, 127 S. Ct. at 1742; *see also* 127 S. Ct. at 1740 (“[W]hen a patent claims a structure already known in the prior art that is altered by mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.”).

While it reaffirmed the obviousness of substituting equivalent elements, and stressed the importance of a flexible approach to the obviousness question, the Supreme Court nonetheless also noted that “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements *in the way the claimed new invention does* . . . because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.” *KSR*, 127 S. Ct. at 1741 (emphasis added); *see also id.* at 1740-41 (requiring a determination of “whether there was an apparent reason to combine the known elements *in the fashion claimed* by the patent at issue”) (emphasis added).

Thus, ultimately, “[i]n determining whether obviousness is established by combining the teachings of the prior art, the test is what the combined teachings of the references would have suggested to those of ordinary skill

in the art.” *In re GPAC Inc.*, 57 F.3d 1573, 1581 (Fed. Cir. 1995) (internal quotations omitted).

Also, when evaluating the references’ respective teachings, “[t]he fact that the motivating benefit comes at the expense of another benefit, however, should not nullify its use as a basis to modify the disclosure of one reference with the teachings of another. Instead, the benefits, both lost and gained, should be weighed against one another.” *Medichem S.A. v. Rolabo S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006) (quoting *Winner Int’l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8, (Fed. Cir. 2000)).

ANALYSIS

We agree with Appellants that the Examiner erred in concluding that a person of ordinary skill in the art would have considered it obvious to replace the polysiloxane emollient-containing lotion on the topsheet of Roe’s diaper with the elastomeric cross-linked polysiloxane gel of Lin.

Specifically, we note Lin’s disclosure that its elastomeric gel can be used to deliver a variety of active agents to a user’s skin, including antibacterial, pharmaceutical, deodorant, and astringent compounds (FF 11, 12), like the lotion applied to the skin-facing inner liner of Roe’s diapers (FF 8). We also note that the oil used as the fluid medium in Lin’s gels can be mineral oil or petrolatum (FF 13), the same substances used as emollients in Roe’s lotion (FF 2).

However, Roe discloses that a critical property of its lotion is the capacity to be, essentially, rubbed off the diaper liner onto the wearer’s skin, thereby enhancing subsequent cleanup (FF 1, 4, 5), as well as allowing the emollient in the lotion to provide skin soothing, moisturizing, and

lubricating effects (FF 3). The Examiner asserts that the oil in Lin's gel would provide the skin soothing effect required by Roe (Ans. 7).

We agree with the Examiner that Lin's gel contains oils that have emollient properties (*see* FF 1, 13). We also agree that Lin's gels are disclosed as having a lubricious skin feel (FF 14), like the lotions in Roe (FF 3).

However, the Examiner does not point to any disclosure in Lin, or for that matter Roe, suggesting that the oil in Lin's cross-linked gel would be released from the gel in sufficient quantities to provide the skin lubricating effects, much less the cleanup-enhancing properties, disclosed by Roe as being critical to the function of its diapers. Rather, Lin discloses that its gels are suitably applied to personal care articles, such as wipes (FF 9, 14), thus suggesting that the gel itself is maintained on the substrate while the active agent is delivered to the user. Lin also expressly states that its matrix entraps the active ingredient (FF 11), a different function than the transferability characteristics taught by Roe for its compound (FF 4, 5). We therefore do not agree with the Examiner that a person of ordinary skill in the art would have considered Lin's active agent-delivering elastomeric gels to be equivalent to Roe's emollient lotion, for use on Roe's diapers.

The Examiner argues that substituting Lin's silicone gel for Roe's lotion does not change the active agent-delivering functionality of Roe's diapers, "even if other functions of Roe are changed" (Ans. 7). We are not persuaded by this argument.

We note that the relative advantages of each reference must be considered when considering the obviousness of a claim. However, on the current record, the Examiner does not point to any specific evidence

suggesting that placing Lin's silicone gels on the skin-facing surface of Roe's diapers would provide the skin lubricating and cleanup enhancing effects disclosed by Roe as being critical to the function of its diapers. Because replacing Roe's lotion with Lin's gel would eliminate a critical functionality of Roe's diapers, we do not agree with the Examiner that a person of ordinary skill would have been prompted to place Lin's gel on the skin-facing surface of Roe's diapers, as posited by the Examiner.

In sum, independent claim 1 recites an absorbent article that includes a cross-linked polysiloxane gel, and claim 16 recites, essentially, a method of making that article. For the reasons discussed above, we agree with Appellants that the Examiner failed to make a prima facie case that a person of ordinary skill in the art would have considered that structure obvious in view of Roe and Lin.

The Examiner does not point to any disclosure in either Runeman or Muckenfuhs that remedies the discussed deficiencies of Roe and Lin with respect to claims 1 and 16. We therefore reverse the Examiner's obviousness rejection of claims 1 and 16, as well as the obviousness rejections of their dependent claims 2-15, 17, and 18.

REVERSED

Ssc:

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